

# A Prescription Audit And Study on Prevalence Pattern of Prescribing Major Drug Groups in an Outpatient Pharmacy at a tertiary care hospital, Bangalore, India

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## ABSTRACT

**Aim:** Assessment of quality of medical care in Bangalore Baptist Hospital (tertiary care hospital), quantifying and describing the appropriateness of medical care by measuring the who core prescribing indicators, and assessment of rational prescription pattern in a tertiary care teaching hospital in eastern India.

**Methodology:** prescription audit is a tool as well as a technique and its application is science as well as an art. Quality of life can be improved by upgrading the benchmarks of restorative treatment and that must be surveyed by solution review, since it depends on archived confirmations to help conclusion, treatment and supported use of emergency clinic offices. Effective prescription audit is important for health professionals, health service managers, patients, and the public. It underpins wellbeing experts in ensuring their patients get the most ideal care. It can inform health service managers about the need for organizational changes, or new investment to support health professionals in their practice. Prescription audit is improvement process that looks to improve persistent consideration. in this foundation the present examination was led in this tertiary consideration educating emergency clinic of eastern India, as previously no such study conducted at this institution.

**Result:** General medicine OPD contributing patients with the most frequent diagnosis was the disease of the gastro-intestinal system of prescription contain more than single diagnosis with total numbers of drugs prescribed. prescribed from essential drugs list or formulary was only 60.98%, and overall illegibility of prescription was 22.99%.

**Conclusion:** The results of this study show the prevailing prescribing habits This examination uncovers that the evaluating of remedy regarding sanity, it remains poor. The estimation of such reviews in producing and testing speculations on improper endorsing will make a mediation to improve recommending propensities and eventually persistent consideration will be improved.

**Key words:** Prescription Audit, Prevalence Pattern, Outpatient Pharmacy

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## INTRODUCTION

Prescribing pattern thinks about are ground-breaking exploratory instruments to discover the role of drugs in society. In a tertiary consideration focus, endorsing is required to be sensible, proper, sheltered, compelling and prudent. A definitive objective is to accomplish judicious and successful restorative consideration, especially in the financially creating nations. Thinking about these realities, this investigation is wanted to examine the recommending design in paediatric patients at a tertiary consideration clinic. Paediatrics is the part of medication managing the improvement, ailments and clutters of youngsters Drug treatment is viewed as significant segment of paediatric administration in medicinal services setting like emergency clinic. Successful restorative treatment of a paediatric patient depends on a precise analysis and ideal course of treatment, which for the most part includes a medicine routine<sup>1,2</sup>. Infants and kids are particularly powerless against contract sicknesses and to the unsafe impact of medications because of contrasts in pharmacodynamics and pharmacokinetics<sup>3</sup>. Compared to grown-up medications, sedate use in paediatrics isn't widely looked into and the scope of authorized medication in suitable measurements structure is constrained<sup>4</sup>.

The World Health Organization (WHO) characterized level-headed utilization of medication as patients getting drugs fitting to their clinical needs in portions that meet their own individual prerequisites, for a satisfactory timeframe

and at the most minimal expense to them and their locale<sup>6,9</sup>. Thus, suitable medication usage is basic in accomplishing nature of wellbeing and medicinal consideration for patients.

Medication use is an intricate subject including the prescriber, the patient and the gadget. [5] Despite the multifaceted nature of medication use, various pointers have been created, institutionalized and assessed by the WHO<sup>7,8</sup>. These indicators are used to measure drug use in out-patient facilities and provide measures of the optimal use of resources in the facilities as well as help in correcting deviations from the expected standards and in planning<sup>7,8,9</sup>.

The prescription request is a significant exchange between the specialist and the patient. The endorsing conduct of the specialist relies on the contribution from different sources like patients, scholarly literary works, proficient partners, business attention and government guidelines. Different endorsing mistakes are aftereffect of inadequate utilization of these data sources and are very basic in clinical rehearses. One of the most squeezing issues confronting general wellbeing suppliers and directors in numerous nations is the levelheaded utilization of medications<sup>11</sup>.

Objective utilization of medications depends on utilization of right tranquilize, right measurements at right cost which is all around reflected on the planet wellbeing association (WHO) definition: "Judicious utilization of medications necessitates that patients get drugs fitting to

their clinical needs, in dosages that meet their own individual prerequisites for a satisfactory timeframe, at the least cost to them and their community<sup>12</sup>. Around the world, it is assessed that over portion of all meds are endorsed, administered or sold improperly, and that half of all patient's neglect to take their prescription effectively.

Nonsensical recommending is a worldwide issue. The objectivity of endorsing design is of most extreme significance since terrible recommending propensities including abuse, abuse and underuse of meds can prompt perilous treatment, compounding of the malady, wellbeing dangers, and monetary weight on the patients and wastage of assets. Instances of unreasonable utilization of drugs include: poly-drug store, lacking dose, and utilization of antimicrobials in any event, for non-bacterial contaminations, exorbitant utilization of infusions when oral structures are accessible and wrong, self-medicine and resistance to dosing regimens<sup>13</sup>.

Prescribers can possibly treat patients in a balanced manner on the off chance that they approach a fundamental medications rundown and basic medications are accessible all the time. Basic drugs offer a savvy answer for some medical issues in a creating nation. They ought to be chosen with due respect to malady commonness, be moderate, with guaranteed quality and be accessible in the fitting dose structures<sup>6</sup>.

Reconnaissance of medication use by the specialists, inside the organization just as in the network is accepting an undeniably significant job in therapeutics. The consistent checking of prescriptions may recognize the issues associated with restorative choices and advance the sane endorsing<sup>7</sup>.

## MATERIALS AND METHODS

This is a prospective observation study, based in an outpatient pharmacy at tertiary care hospital with an aim of prescription audit and observes the drug utilization pattern. Study will be conducted at outpatient pharmacy department of BBH (Baptist hospital). All the outpatient's /inpatients prescriptions presented at outpatient pharmacy will be collected on daily basis and will be reviewed. The prescription parts, sedate usage conduct and recommending consistence to emergency clinic model will be noted and will be oppressed for further examination.

All the prescriptions presented at the outpatient pharmacy outlet will be collected on daily basis. The prescription will be screened and the complaint and noncompliant component will be noted in a predefined data collection. The major prescription components such as prescription legibility, patient's age and gender, medication's generic name and dosage form, and inappropriate abbreviations etc. will be analyzed. Potential drug-drug interactions in the prescription will find out using drug interaction checker, classify them accordingly and document. The drugs prescribed in the prescriptions will be checked with available hospital formulary; the prescribed drugs which are excluded in the formulary will be noted. The Micromedex, Medscape, Reference articles and books will be used as the tools to analyze the prescription. Day wise the data will be documented. And the data will be confidential, further analysis of the data will be done with

appropriate software. The analyzed data will be shared with the concerned authority for their information.

## RESULT AND DISCUSION

In this study total 1000 prescriptions collected during the study period. Proportions of female patients were higher 538 than male while children constituted 0.3 and the patients aged between 18 years to 60 years constituted 0.54%. But age was not mentioned in 5 patients. Out of 1000 prescription auditing during the study period general medicine was the highest number of prescription (659) that could be included in the study, followed by dermatology (178) and surgery (74).

The most prescribed category of drugs was anti-infective/antibiotic/antimicrobials, followed by drugs of the gastrointestinal system, minerals & vitamins cardiovascular system drugs, drugs of the respiratory system, ear, nose and throat preparation, eye preparation, drugs of the central nervous system, anti-cancer drugs in decreasing frequency order. In this study it was observed that only 26 of total prescriptions contained single drugs as monotherapy and rest of the prescriptions contained poly-therapy with maximum portion of the prescriptions contained four drugs. Table1

During the study period of 1000 prescription auditing the major auditing parameters are Prescription without generic name constitute the highest (0.556%). Prescription Without drug in capitals constitute 0.278% followed by Prescription Not legible, Prescription with inappropriate abbreviations, Prescription Dose not mentioned, Prescription with dosage form not mentioned etc. Table 2

In present study, total 40 prescriptions obtained score less than 30 for which major reasons were improper dose in 25(62.5%) prescriptions, second or wrong choice of drugs in 4 (10%) prescriptions, unnecessary drug or injection in 4 (10%) prescriptions.

Prescribing minimum required number of drugs per patient carries less chances of drug - drug interactions and adverse effects of drugs, decreased cost of therapy and increased patient 's compliance. In present study, number of drugs prescribed in any patient ranged from 1 to 13 with an average of 6.01% drugs per patient.

Improper use of antibacterial - overuse or not using when required - is one of the important reasons of irrational prescribing and development of antimicrobial resistance. In 93 patients in whom antibacterial was/were prescribed, in majority of them, one (42 patients) or two (35 patients) antibacterial were prescribed. Maximum number of antibacterial prescribed was 5 in single patient (Figure 1).

In this study, total 136 antibacterial agents were prescribed. The most frequently prescribed antibacterial were Cephalosporin followed by penicillin's. Among cephalosporin, only third generation cephalosporin were prescribed which included ceftriaxone (26.47%) in majority of instances; while among penicillin, most frequently prescribed was amoxicillin +clavulanic acid (30.15%). Other antibacterial prescribed were amikacin, ofloxacin, sulfamethoxazole + trimethoprim, vancomycin, clindamycin, linezolid, meropenam and erythromycin.

Table1: The Prevalence Pattern of Prescribing Major Drug Groups

Drug Groups	No of Prescriptions	%age
Antibiotics ,Anti infective	336	0.336
Gastrointestinal drugs	245	0.245
Respiratory drugs	134	0.134
Minerals and vitamins	163	0.163
Skin preparations	26	0.026
others	96	0.096

Table 2: Prescription Audit and Its Parameters

Auditing parameters	n	%age
Prescription without generic name	556	0.556
Prescription Without drug in capitals	278	0.278
Prescription Not legible	108	0.108
Prescription With inappropriate abbreviations	134	0.134
Prescription Dose not mentioned	46	0.046
Prescription With dosage form not mentioned	14	0.014
Prescription With route not mentioned	96	0.096
Prescription Frequency not mentioned	70	0.070
Prescription With drug substitution	144	0.144
Prescription Without direction of use	224	0.224
Total	1670	100

Fig 1: Non Formulary Drugs in Prescription

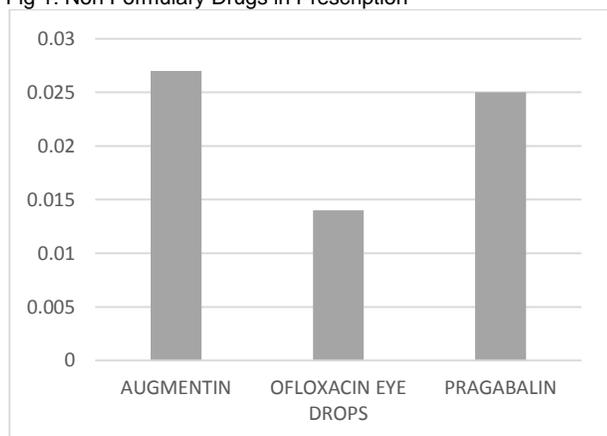


Table 3: Mechanism of Drug Interactions

Type Of interaction	Total	Percentage
<b>Severity</b>		
Major	30	0.030
Moderate	70	0.070
total	100	100
<b>Pharmacokinetic interaction</b>		
Absorption	13	0.013
Distribution	9	0.009
Metabolism	53	0.053
Excretion	0	0
total	89	0.089
<b>Pharmacodynamics interaction</b>		
synergism	22	0.022
antagonism	9	0.009
neutralization	14	0.014

Total drugs prescribed in the present study were 601. Drugs used for treatment of different conditions in pediatric patients were antibacterial (22.63%) vitamins and minerals (21.46%), NSAIDs (12.65%), antihistamines (6.66%) and antiemetic (6.16%). Apart from these,  $\beta$ 2 agonist, antiepileptic/anticonvulsants, corticosteroids, hematonic, H2

blockers, antitussive agents, diuretics, anticholinergics and proton pump inhibitors were also prescribed.

## CONCLUSION

This type of study helps to evaluate, monitor and if necessary, suggest changes or modifications in prescribing practices of clinicians which will ultimately make patient care more rational and cost- effective.

Though the results reflect rational prescribing in different department of our hospital set up, there is still extent of progress in zones of dose computation, legitimate documentation endorsing drugs by nonexclusive name and from WHO-EML for kids beyond what many would consider possible.

Periodic prescriptions investigation and powerful feedback to clinician ought to be done dependent on results to guarantee balanced endorsing and powerful medicinal services the board.

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